

AMENDMENTS TO THE CLAIMS

A listing of the claims presented in this patent application appears below. This listing replaces all prior versions and listing of claims in this patent application.

Claim 1 (canceled).

Claim 2 (canceled).

Claim 3 (canceled).

Claim 4 (canceled).

Claim 5 (canceled).

Claim 6 (canceled).

Claim 7 (canceled).

Claim 8 (canceled).

Claim 9 (canceled).

Claim 10 (canceled).

Claim 11 (canceled).

Claim 12 (canceled).

Claim 13 (currently amended): A biosensor for the detection and/or the determination of ~~freshness biomarkers in the form of biogenic amines~~ biogenic amines as freshness markers, comprising:

an electrode and

- (i) a mono-enzyme system of an amine oxidase or
- (ii) a bi-enzyme system of an amine oxidase and a peroxidase,

wherein said amine oxidase is a copper-containing grass pea oxidase (E.C. 1.4.3.6) and said electrode is a carbon/graphite based electrode, and whereby said amine oxidase is cross-linked to the electrode into an osmium based redox polymer.

Claim 14 (previously added): The biosensor according to claim 13, characterised in that the bi-enzyme system contains said copper-containing amine oxidase derived from grass pea coupled with horseradish, soybean, tobacco, sweet potato or palmtree peroxidase.

Claim 15 (previously added): The biosensor according to claim 14, characterised in that the peroxidase is horseradish peroxidase.

Claim 16 (previously added): The biosensor according to claim 13, characterised in that the osmium based redox polymer includes poly(1-vinylimidazole) complexed with $[\text{Os}(\text{4,4'-dimethyl-bi-pyridin})_2 \text{Cl}]^{+/2+}$ and poly(ethyleneglycol)diglycidyl ether, as the crosslinking agent.

Claim 17 (currently amended): The biosensor according to claim 13, characterised in that the biosensor is of Type I, Type II or Type III type of biosensor, wherein:

Type I: the mono-enzyme or the bi-enzyme system is added direct ~~on to~~ onto the electrode surface; or

Type II: the mono-enzyme or the bi-enzyme system is entrapped in the osmium based redox polymer added on the ~~top~~ surface of the electrode; or

Type III: the mono-enzyme or the bi-enzyme system and the osmium based redox polymer forms sequential coatings added on ~~top~~ the surface of the electrode.

Claim 18 (previously added): The biosensor according to claim 17, characterised in that the biosensor of Type III is one of Type III a, Type III b, Type III c or Type III d, wherein:

Type III a: a second coating of the mono-enzyme is coating a dried layer of peroxidase and redox hydrogel; or

Type III b: a second coating of peroxidase and redox hydrogel is coating a dried layer of the mono-enzyme; or

Type III c: a second coating of the mono-enzyme entrapped in redox hydrogel is coating a dried layer of peroxidase; or

Type III d: a second coating of peroxidase is coating a dried layer of mono-enzyme entrapped in redox hydrogel.

Claim 19 (previously added): A biosensor according to claim 15, wherein the weight ratio of amine oxidase to horseradish peroxidase is 80:20.

Claim 20 (currently amended): A method for the detection or determination of freshness biomarkers or of the content of biomarkers in a food sample, comprising the steps of comparing the electrical output to some standard curve for amines or for histamine; establishing a relationship between the electrical output and freshness or for histamine; and applying said sample to the biosensor of claim 13 and detecting an electrical output from said biosensor.

Claim 21 (currently amended): A method for the detection or determination of histamine in a body fluid, in medical diagnoses or in the treatment of a disease from a sample, comprising the steps of comparing the electrical output to some standard curve for amines or for histamine; establishing a relationship between the electrical output and freshness or for histamine; and applying said sample to the biosensor of claim 13 and detecting an electrical output from said biosensor.

Claim 22 (previously added): A method for the detection or determination of histamine in a sample of microdialysates or dialysates, comprising the steps of applying said sample to the biosensor of claim 13 and detecting an electrical output from said biosensor.